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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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ERICSSON INC. 6300 LEGACY DRIVE M/S EVR 1-C-11 PLANO, TX 75024			EXAMINER TRUONG, THANHNGA B	
			ART UNIT 2438	PAPER NUMBER
			MAIL DATE 08/17/2009	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/602,167

**Applicant(s)**

GEHRMANN, CHRISTIAN

**Examiner**

THANHNGA B. TRUONG

**Art Unit**

2438

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 April 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

#### DETAILED ACTION

1. Applicant's amendment filed on April 23, 2009 has been entered. Claims 1-12 are pending. At this time, claims 1-12 are still rejected.

#### *Response to Arguments*

2. Applicant's arguments filed April 23, 2009, under **35 USC § 112** with respect to claims 10 and 11 have been fully considered and are persuasive. Therefore, the previous rejection for claims 10 and 11 under **35 USC § 112** has been withdrawn. However, the new amended language, such as "first code segment", "second code segment", and "third code segment" has introduced the new matter, which will address later in this action.

Applicant's arguments filed April 23, 2009 have been fully considered, at least under **35 USC § 101**, but they are still not persuasive. Although applicant amended the preamble of claims 10 and 11 to try to overcome the non-statutory matter, it still fails to meet the statutory condition. The new preamble cites "a computer program product embodied on a computer readable medium loaded into a memory and executed by a processor.....In the Specification of the present application, the "computer readable medium" is expressly defined as including from another computer via a computer network, (emphasis added)" (page 5, lines 10-12 of the specification) wherein the code can be transmitted via a computer network (e.g., signals, carrier waves, transmissions, optical waves, transmission media) which clearly including intangible media such as signals, carrier waves, transmissions, optical waves, transmission media or other media incapable of being touched or perceived absent the tangible medium through which they are conveyed. Thus, the recited "computer readable medium" is not a "process," a "machine," a "manufacture" or a "composition of matter," as defined in 35 USC 101. Accordingly, Claims 10 and 11 fail to recite statutory subject matter under 35 USC 101. Therefore, claims 10 and 11 are signal per se and they are non-statutory.

Applicant's arguments filed April 23, 2009, with respect to the rejection(s) of claim(s) 1-12 under **35 USC § 103** have been fully considered, but they are still not persuasive. Applicant and/or Applicant Representative have argued the same subject

matter as in remarks/arguments filed February 11, 2008, September 23, 2008, and October 14, 2008. Therefore, examiner will maintain the same subject matter as in the previous actions.

Applicant and/or Applicant's Representative argue that:

The combination of teaching between Graveman and Carman for claims 1-5, 7-12 and the combination of teaching between Graveman, Carman, and Shokrollahi for claims 5-6 are improper.

Examiner respectfully disagrees with Applicant and/or Applicant's Representative and still believes that the combination of teaching between Graveman and Carman teaches the claimed subject matter. In fact, Graveman teaches An approximate message authentication code (AMAC) which, like conventional message authentication codes, provides absolute authentication of the origin of the message, yet provides an approximate integrity check for the content of the message. The approximate integrity check will be computed probabilistically and will likely be the same for messages having only a small percentage of different bits. A distance measure on the AMACs, such as a Hamming distance measure, may be used to determine whether the number of bit differences between the messages is likely to be within an acceptable amount. The AMAC is a probabilistic checksum based on a shared key. The AMAC uses the message and a shared key as inputs (see abstract of Graveman, and more details of claim 1's limitation are taught by Graveman in column 5, lines 13-40; column 6, line 64 through column 7, line 19; column 8, lines 31-35 of Graveman).

Although Graveman teaches the technique to process message authentication code using initial vectors (which is the symbols of the codeword), Graveman is silent on the capability of showing the details of forming a codeword (e.g., message authentication code or data word) and the tag value to be the selected symbol. On the other hand, Carman teaches codeword in column 2, lines 1-11; column 20, lines 57-67 of Carman, and tag value in Figures 1, 17A-17B and more details in column 3, lines 35-43; column 26, lines 25-36 of Carman. Thus, the combination of teaching between Graveman and Carman teaches the claimed subject matter.

The combination of the teaching between Graveman and Carman further teaches the type of error correction code, wherein Reed-Solomon is one kind of error correcting code which defines in terms of finite field. However they are silent on the capability to show the tag value is an element in a finite field (column 5, lines 37-40 of Graveman). On the other hand, Shokrollahi teaches this limitation (as shown in column 1, lines 19-35 of Shokrollahi). Thus, the combination of teaching between Graveman, Carman, and Shokrollahi teaches the claimed subject matter.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, based on the above response, the combination of teaching between Graveman, Carma, and Shokrollahi is proper and efficient.

Graveman, Carma, and Shokrollah do not need to disclose anything over and above the invention as claimed in order to render it unpatentable or anticipate. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claimed limitations.

For the above reasons, it is believed that the rejections should be sustained.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 10-11 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The new amended languages recite in claims 10 and 11, such as "first code segment", "second code segment", and "third code segment" does not support by the instant specification. Thus these languages introduced the new matter. Appropriate correction is required.

***Claim Rejections - 35 USC § 101***

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Claims 10 and 11 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

a. *Referring to claims 10-11:*

Claim 10 and 11 recite "a computer program product embodied on a computer readable medium loaded into a memory and executed by a processor to determine a tag value from the message and from a message and from a key according to a message authentication code." In the Specification of the present application, the "computer readable medium" is expressly defined as including *from another computer via a computer network, (emphasis added)*" (page 5, lines 10-12 of the specification) wherein the code can be transmitted *via a computer network* (e.g., signals, carrier waves, transmissions, optical waves, transmission media) which clearly including intangible media such as signals, carrier waves, transmissions, optical waves, transmission media or other media incapable of being touched or perceived absent the tangible medium through which they are conveyed. Thus, the recited "computer readable medium" is not a "process," a "machine," a "manufacture" or a "composition of matter," as defined in 35 USC 101. Accordingly, Claims 10 and 11 fail to recite statutory

subject matter under 35 USC 101. Therefore, claims 10 and 11 are signal per se and they are non-statutory.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-5, 7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graveman (US 6,851,052 B1), and further in view of Carman et al (US 6,845,449 B1).

a. *Referring to claim 1:*

i. Graveman teaches a method of processing a message to determine a tag value from the message and from a key according to a message authentication code (column 5, lines 13-30 of Graveman), the method comprising:

(1) selecting one of a plurality of symbols (e.g., vectors), the plurality of symbols forming a codeword encoding a data item derived from the message, the codeword encoding the data item according to an error correcting code, wherein said key determines which one of said plurality of symbols is selected; and determining the tag value to be the selected symbol (**column 5, lines 13-40; column 6, line 64 through column 7, line 19; column 8, lines 31-35 of Graveman**).

ii. Although Graveman teaches the technique to process message authentication code using initial vectors (which is the symbols of the codeword), Graveman is silent on the capability of showing the details of forming a codeword (e.g., message authentication code or data word) and the tag value to be the selected symbol. On the other hand, Carman teaches codeword **in column 2, lines 1-11; column 20, lines 57-67 of Carman, and tag value in Figures 1, 17A-17B and more details in column 3, lines 35-43; column 26, lines 25-36 of Carman**.

iii. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to:

(1) have modified the invention of Graveman (if indeed is not inherently) with the teaching of Carman to authenticating the source and integrity of transmitted or stored information **(column 1, lines 24-25 of Graveman)**.

iv. The ordinary skilled person would have been motivated to:

(1) have modified the invention of Graveman (if indeed is not inherently) with the teaching of Carman to provide absolute authentication of the source or origin of a received message and permits verifying approximate integrity between the original message and the received message **(column 1, lines 28-31 of Graveman)**.

b. Referring to claim 2:

i. Graveman further teaches:

(1) wherein the data item derived from the message consists of said message **(column 8, lines 29-48 of Graveman)**.

c. Referring to claim 3:

i. Graveman further teaches:

(1) further comprising determining said data item to be a hash value of a one-way hash function calculated from the message **(column 1, lines 42-45 and line 55 through column 2, line 7 of Graveman)**.

d. Referring to claim 4:

i. The combination of the teaching between Graveman and Carman teaches the length of the key **(column 6, lines 44-48 of Graveman)**, and Carman further teaches:

(1) wherein the key is short enough to be communicated via a user interaction **(column 20, lines 57-67 of Carman)**.

e. Referring to claim 5:

i. The combination of the teaching between Graveman and Carman teaches the type of error correction code, wherein Reed-Solomon is one kind of



error correcting code **(column 5, lines 37-40 of Graveman)**, and Carman further teaches:

(1) wherein the error correcting code is a Reed-Solomon code and wherein the tag value is determined by evaluating a Reed-Solomon encoding polynomial at a point determined by the key **(Figure 17B and more details in column 26, lines 3-36 of Carman)**.

f. Referring to claim 7:

i. Graveman further teaches:

(1) further comprising communicating at least a contribution to the message from a sender to a receiver via a first communications channel **(column 5, lines 36-40 of Graveman)**; and communicating the tag value and/or the key from the sender to the receiver via a second communications channel different from the first communications channel **(column 10, lines 16-26 of Graveman)**.

g. Referring to claim 8:

i. Graveman further teaches:

(1) wherein the second communications channel includes a user interaction **(column 2, lines 11-16 of Graveman)**.

h. Referring to claims 9 and 12:

i. These claims consist a communications device for communicating data messages, the communications device to implement claim 1, thus they are rejected with the same rationale applied against claim 1 above.

i. Referring to claims 10 and 11:

i. These claims consist a computer program product embodied on a computer readable medium loaded into a memory and executed by a processor to determine a tag value from the message and from a message and from a key according to a message authentication code, the computer program product to implement claim 1, thus they are rejected with the same rationale applied against claim 1 above.

9. Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graveman (US 6,851,052 B1), in view of Carman et al (US 6,845,449 B1), and further in view of Shokrollahi (US 6,631,172).

a. Referring to claims 5 and 6:

i. The combination of the teaching between Graveman and Carman teaches the type of error correction code, wherein Reed-Solomon is one kind of error correcting code which defines in terms of finite field. However they are silent on the capability to show the tag value is an element in a finite field (**column 5, lines 37-40 of Graveman**). On the other hand, Shokrollahi teaches this limitation (**as shown in column 1, lines 19-35 of Shokrollahi**).

ii. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to:

(1) have modified the invention of Graveman-modified (if indeed is not inherently) with the teaching of Shokrollahi to authenticating the source and integrity of transmitted or stored information (**column 1, lines 24-25 of Graveman**).

iii. The ordinary skilled person would have been motivated to:

(1) have modified the invention of Graveman-modified (if indeed is not inherently) with the teaching of Shokrollahi to provide absolute authentication of the source or origin of a received message and permits verifying approximate integrity between the original message and the received message (**column 1, lines 28-31 of Graveman**).

**Conclusion**

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanhnga (Tanya) Truong whose telephone number is 571-272-3858.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Taghi Arani can be reached at 571-272-3787. The fax and phone numbers for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2100.

/Thanhnga B. Truong/  
Primary Examiner, Art Unit 2438  
August 13, 2009